(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



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(43) International Publication Date 25 March 2004 (25.03.2004)

PCT

(10) International Publication Number WO 2004/024201 A3

(51) International Patent Classification7: 31/02

A61L 27/32,

(21) International Application Number:

PCT/CA2003/001405

(22) International Filing Date:

12 September 2003 (12.09.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/410,307

13 September 2002 (13.09.2002) US

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- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU. CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

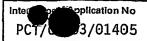
- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 15 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CALCIUM PHOSPHATE COATED IMPLANTABLE MEDICAL DEVICES AND PROCESSES FOR MAKING SAME

(57) Abstract: This invention relates to calcium phosphate-coated implantable medical devices and processes of making same. The calcium-phosphate coatings are designed to minimize the immune response to the implant (e.g. restenosis in stenting procedures) and can be used to store and release a medicinally active agent in a controlled manner. Such coatings can be applied to any implantable medical devices and are useful for a number of medical procedures including (but not limited to) balloon angioplasty in cardiovascular stenting, ureteral stenting and catheterisation. The calcium phosphate coatings can be applied to a substrate as one or more coatings by a sol-gel deposition process, an aerosol-gel deposition process, a biomimetic deposition process, a calcium phosphate cement deposition process, an electro-phoretic deposition process or an electrochemical deposition process. The coating can contain and elude a drug in an engineered manner.





A. CLASSIFICATION OF SUBJECT MATTER
1PC 7 A61L27/32 A61L31/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

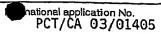
 $\begin{array}{ll} \text{Minimum documentation searched (classification system followed by classification symbols)} \\ \text{IPC 7} & \text{A61L} \end{array}$

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, EMBASE, BIOSIS, FSTA

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Category *	Citation of document, with indication, where appropriate, of the	e relevant passages	Relevant to claim No.	
Х,Ү	US 6 113 993 A (GAO YUFEI ET 6 5 September 2000 (2000-09-05) claims 1-3,10,11,15 column 2, lines 25-27	AL) .	1-15	
X , Y	US 6 139 585 A (LI PANJIAN) 31 October 2000 (2000-10-31) claims 1,2,6,7 column 3, lines 47-51 column 4, lines 51-56		1-15	
		-/		
X Furt	ther documents are listed in the continuation of box C.	Patent family members are listed	in annex.	
	ategories of cited documents : ent defining the general state of the art which is not dered to be of particular relevance	"T" later document published after the inte or priority date and not in conflict with cited to understand the principle or the	ernational filing date the application but eory underlying the	
"E" earlier document but published on or after the international filling date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filling date but later than the priority date claimed Date of the actual completion of the international search		"X" document of particular relevance; the cannot be considered novel or canno involve an inventive step when the do "Y" document of particular relevance; the cannot be considered to involve an indocument is combined with one or ments, such combination being obvious in the art. "&" document member of the same patent	the document is taken alone; the claimed invention an inventive step when the or more other such docuobvious to a person skilled	
		Date of mailing of the international sea		
	30 January 2004	17. 05. 2004		
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Box I	Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This Inte	ernational Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1	Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2.	Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
з. 📑	Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II	Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
This Inte	. ernational Searching Authority found multiple inventions in this international application, as follows:
	see additional sheet
1.	As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.	As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
з	As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. X.	No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-26
	· ·
Remark	t on Protest The additional search fees were accompanied by the applicant's protest.
	No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-26

Process for coating an implantable medical device with a calcium phosphate coating comprising:

(a) hydrolysing a phosphor precursor in water or alcohol based medium;

(b) adding a calcium salt precursor to the medium to obtain a calcium phosphate gel;

(c) depositiong the gel on the surface of a substrate;

(d) calcining the coating at a suitable elevated tempetature. [Claims 16-26]

Implantable medical devices coated with a calcium phosphate coating. [Claims 1-15].

2. claims: 27-36 (partially); 1-15

Process for coating a (soft tissue) implantable device with a calcium phosphate coating utilizing a biomimetic deposition process. [Claims 27-36 (partially)] Implantable medical devices coated with a calcium phosphate coating. [Claims 1-15].

3. claims: 27-36 (partially); 1-15

Process for coating a (soft tissue) implantable device with a calcium phosphate coating utilizing a calcium phosphate cement deposition process. [Claims 27-36 (partially)] Implantable medical devices coated with a calcium phosphate coating. [Claims 1-15].

4. claims: 27-36 (partially); 1-15

Process for coating a (soft tissue) implantable device with a calcium phosphate coating utilizing an electrophoretic deposition process. [Claims 27-36 (partially)] Implantable medical devices coated with a calcium phosphate coating. [Claims 1-15].

5. claims: 27-36 (partially); 1-15

Process for coating a (soft tissue) implantable device with a calcium phosphate coating utilizing an electrochemical deposition process. [Claims 27-36 (partially)] Implantable medical devices coated with a calcium phosphate coating. [Claims 1-15].

PC17 3/01405

		PC17 03/01405
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Form PCT/ISA/210 (continuation of second sheet) (January 2004)

Intermious Application No
PC17 03/01405

		PC17 03/01405
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
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